MADISON WETLAND MANAGEMENT DISTRICT

Madison, South Dakota

ANNUAL NARRATIVE REPORT

Calendar Year 1987

U.S. Department of the Interior
Fish and Wildlife Service
NATIONAL WILDLIFE REFUGE SYSTEM

REVIEW AND APPROVALS

MADISON WETLAND MANAGEMENT DISTRICT

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Calendar Year 1987

David P. Gilbert — 7-30-88
Refuge Manager — Date

Refuge Supervisor Review — 8/1/88
Date

Ralph F. Frie — 8/1/88
Regional Office Approval — Date

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INTRODUCTION

The Madison Wetland Management District was established in 1969 by withdrawing four counties from the Waubay District and five counties from the Lake Andes District. The nine east central counties include 30,000 acres of fee ownership Waterfowl Production Area. The district is also responsible for administration and enforcement of 40,000 acres of easement wetlands on private lands.

The topography of the district consists of rolling hills at the south end of the Coteau des Prairies formation. Elevation ranges from 1400 to 2200 feet. The eastern counties contain many fine wetlands and numerous lakes. Lake Poinsett, the largest lake in the state, is located in Hamlin County. The Sioux and Vermillion Rivers flow to the south through the district.

The weather of the district is characterized by hot summers with highs in the 90's and humidity in the 50's. Winters are moderately cold with frequent lows colder than -20 F. Winter snow accumulation in grass cover is typically 12 to 18 inches. Average annual precipitation ranges from 25 inches in the eastern counties to 23 inches at the west edge of the district.

The Madison District marks the western edge of the tall grass or "true prairie". Native areas in our eastern counties are dominated by tall warm season grasses such as Big bluestem, Indiangrass and Switchgrass. Grasslands in our western counties are dominated by cool season species such as Western wheatgrass and Green needlegrass in level areas and Little bluestem on south and west slopes. Tall warm season grasses occur on sites having good moisture. 80% of the private land in the district is tilled for a large variety of row crops and small grains including corn, soybeans, sunflowers and flax.

40% of the WPA land is wetland: 3% temporary potholes, 29% seasonal wetlands often with dense stands of cattail or river bulrush. Semi-permanent marshes with intermittent cattail and bulrush and open water total 58%. An additional 10% is considered permanent wetland with open water in the center and vegetation belts around the edge. The upland cover of the district is approximately 28% natives, 23% seeded natives, 26% grass/legumes, 12% other grasslands, 2.6% shelterbelts and other tree plantings and .4% native tree growth (buckbrush, willows, etc.). The remaining 8% is farmed by cooperators for wildlife food plots for deer and pheasants or seedbed preparation for reseeding to nesting cover.

Most of the management of the district is on the upland portion. The wetlands are natural marshes without control structures. Water development includes ditch plugs to restore drained marshes, dams on flowages and pair and brood pond developments. One of the largest management programs is control of primary noxious weeds on all cover types as required by State Law.

Grazing is the principal native management tool, employed in a continuous battle against invading Kentucky bluegrass, Quackgrass and Bromegrass. Most original prairie contains a very high percentage of Kentucky bluegrass which if left unmanaged forms a

mulch layer several inches thick suppressing all species, eventually even itself. Fence maintenance and construction necessary to prevent trespass and support necessary grazing management is a large annual project. An average of 25 cooperative farming agreements are executed annually for tillage of 1200 acres for wildlife food plots or preparation for seeding to nesting cover.

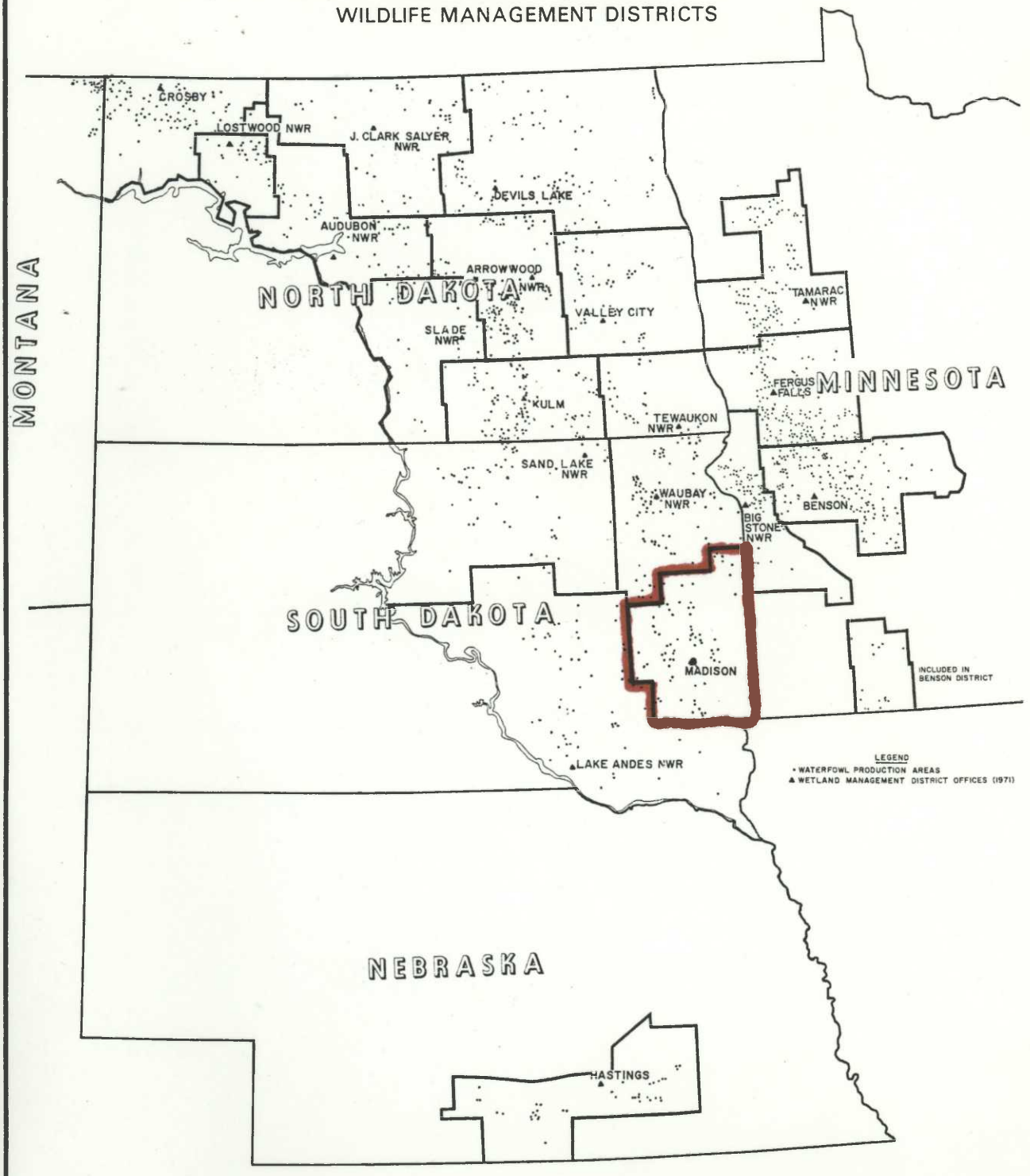
Figure 1. Brad must have come in early to catch this sunrise over the pool at Hqs. 87/43-5
9/11/87 BAK

WATERFOWL PRODUCTION AREAS

UNITED STATES DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE

WILDLIFE MANAGEMENT DISTRICTS



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A. HIGHLIGHTS

FmHA Deed Restrictions offered opportunity for preserving and even restoring wetlands. (C.2)

Swampbuster inspections, followup and work with the USDA agencies were a large job. (E.7)

Work in the flooded L Thompson area continued. (C & F.2)

Grass seed was harvested from some WPAs. (F.5)

Two moose were seen in the district. (G.8)

Some district wetlands are becoming fisheries.(G.11 & H.9)

Assistant manager Brad Knudsen transferred to C.M.Russell NWR Eff date 1-3-88. (E.1)

B. CLIMATIC CONDITIONS

The ground was bare of snow nearly all of Jan & Feb. Highs of 35-40 degrees were common. Water areas were open by early March, but most IVs froze again 3/28-31.

The first snow was 2 inches on 11/28, followed by 1/2" of ice which coated everything, not melting until 12/9. Fourteen inches of snow 12/23-27 was accompanied by extremely strong winds, piling up snow which was still on the ground at year end.

Table 1. 1987 Weather Data, Madison Research Farm (USDA)

	Precipitation (Inches)		Snow	Temperatures		
Month	1987	Normal	(Inches)	High	Low	Mean
January	.13	.83	1.7	57	-21	21.9
February	.67	.83	6.0	60	10	31.5
March	3.23	1.72		75	11	33.6
April	.33	2.43		88	19	51.8
May	2.23	3.19		91	38	62.6
June	2.24	4.02		95	46	70.4
July	5.75	3.12		96	48	73.6
August	2.06	3.06		96	42	66.5
September	2.24	2.29		86	38	60.3
October	.35	1.81	TRACE	82	18	41.8
November	1.38	1.09	2.0 *	64	15	35.9
December	1.41	.69	14.0	47	-3	23.3

* Nov 28, 1/2 inch freezing rain encrusted trees, grass, snow until finally thawing Dec 9. Single spears of grass were more than 1/2 inch in diameter for the entire period.

C. LAND ACQUISITION

A lot of time was spent on Lake Thompson, on inspections and photos, meetings with the governor,s task force, etc. (See also F.2)

C.1. Fee Title

Resistance to fee acquisition is increasing as our Revenue Sharing shortfalls continue.

1987 purchases included Dry Lake (east of Arlington), a historic duck hunting marsh prior to drainage in the early 1900s. Brookings county abandoned the legal drain through it prior to our acquisition. One more parcel remains to be bought before we can complete restoration. Ducks Unlimited is interested in the project.

Roundouts included 25 acres on Peterson WPA (Hamlin Co), Jordon WPA (Minnehaha Co), Benson WPA (Moody Co). A previous 71 acre option adjacent to Moody easement 30X was dropped after too many complications set in, including some which would have closed the unit to hunting and otherwise limited management.

Figure 2. An acquisition moratorium due to fund shortage has prevented acceptance of an offer to sell this Lake Co wetland complex. We hope it will still be available when funds are.

87/75-16A
11/18 TT

Table 2 Fee Acres

County	Total Acres Optioned FY 86	Total Acres Optioned FY 87	Total Fee Acres
Brookings	4000.63	954.00	4954.63
Deuel	2856.46	0	2856.46
Hamlin	2256.31	325.00	2581.31 *
Kingsbury	3597.03	0	3597.03
Lake	5281.94	0	5281.94
McCook	3106.89	0	3106.89
Miner	1578.09	0	1578.09
Minnehaha	3810.74	56.00	3866.74 **
Moody	2220.12	-(11.00)	2209.12 ***
Total:	28,708.21	1324.00	30,032.21

*Rider WPA (300 acres) and Halligan roundout (Mrs. Pearl Peterson- 25 acres)

** (Arvid Jordan _ 56 acres) roundout on the Jordan WPA

*** (Gerald Pederson - 71 acres - option dropped) and FmHA (Benson roundout) was optioned for 60 acres, leaving -11.0 acres for Moody County.

C.2. Easements

Table 3 Easement Acres

County	Easement Wetland Acres FY 86	Easement Wetland Acres FY 87
Brookings	2418	2453
Deuel	4309	4320
Hamlin	4305	4317
Kingsbury	14890	14908
Lake	2228	2246
McCook	3824	3892
Miner	7145	7145
Minnehaha	684	684
Moody	277	424
Total:	40,080	40,389

Deed Restrictions - Farmers Home Administration (FmHA)

New legislation will permit transfer to FWS easement (deed restrictions) to preserve wetlands or flood plains on lands FmHA gets back by borrower default. 61 tracts were inspected with 341 wetlands identified for deed restriction including 111 to be restored.

Figure 3. Deuel Co FmHA inventory Property on which FWS requested deed restrictions of 33 wetlands, including restoration of 3 previously drained. 87/79-16
12/10 BAK

Figure 4. Lake Co FmHA Inventory Property NE 10 105N-53W contained 9 wetlands including 7 restorable. Deed restrictions were requested. 87/46-18
10-/19 DLG

D. PLANNING

D.4. Compliance with Environmental Mandates

E.A.s were completed for a number of roads, power and water lines in the district. Some additional temporary permits for relief of water over roads were issued.

D.5. Research and Investigation

Madison NR 83 - Wetland Vegetation Study (64560 - 2) Daniel Hubbard

Study Title: Forage Potential of Seasonal Wetlands

Objectives: Document the late-season above-ground standing crop and nutritional quality of vegetation in selected stands of seasonal wetland plants.

Study Completed. (Phd dissertation, 1988, SDSU).

Conclusions: Seasonal-wetland-dominated basins produce higher standing crops of forage than uplands having native mixed-grass prairie or cultivated cool-season grasses. However the digestibility of wetland forages is lower on the average. Quality of wetland vegetation, especially Whitetop, becomes very poor during the latter part of the growing season.

Madison NR 83 - Wetland Vegetation Study (64560-2)(continued)
Wetland Haying Study , David Beck, D. Hubbard, K. Higgins

Study Title: Effects of Haying on Seasonal Wetland Hydrophyte and Invertebrate Populations in South Dakota.

Study Completed. (Study No. 7529, P-R Project W-75-R, 1987, SDSU). Conclusions: Vegetative changes - unhayed wetlands had more bare ground or open water due to less frequent drying out (Residual cover reduced evaporation). Unhayed wetlands were dominated by Carex (slough sedge), Polygonum (smart weed), Calamogrostis (blue joint); hayed wetlands were dominated by Eleocharis (spike rush), other sedges and prairie cordgrass.

Invertebrates - Both number and diversity were higher in unhayed wetlands. Total biomass was similar; hayed wetlands tended to have fewer, but larger specimans (e.g. snails and diving beetles.

Madison NR 86 - Cover Manipulation Study (64560 -1) Don Kemner
Study Title: Rejuvenation of upland habitat and response by upland nesting birds.

Objectives: 1. Determine effects of rejuvenation treatments on vegetation. 2. Determine response of upland nesting birds to rejuvenation treatments of upland habitat.

Accomplishments: Study continuing. No interim report.

Madison NR 86 - Hydric Soils Study (64560 - 2) Dan Hubbard, J B Miller, D D Malo, K F Higgins

Objectives: Test the premise that hydric soils support wetland plant communities and to verify the appropriateness of the soils for hydric designation.

Study Completed: Numerous South Dakota soils are being classified regarding hydric soil criteria, and vegetative indicator species identified for use with the National Wetland Inventory (NWI). Study will be published as "Soil-vegetation correlations in prairie potholes of Beadle and Deuel Counties, South Dakota" . 1988. US Fish & Wildlife Service Biol. Rep. 88(22). 97 pp.

Nest Drag (see G.3.)

E. ADMINISTRATION

E.1. Personnel

Several staff members received well deserved promotions as indicated below. Congratulations Dorothy, Earl & Tom. This was the first change in grade structure since the station was established with about 8000 acres of land in 1969

Primary Assistant Manager Brad Knudsen will transfer to Charles M Russell NWR (Jordon), Jan 3, 1988. We appreciated Brad's fine work here and wish him the best of luck.

Temporary employee Noel Matson was hired by the station in 1987 after serving here as a YCC in 1986. Earl Kooiker was a new hire in 1987. He was retained on WAE status at year end. (See also E.4.)

E.4. Volunteer Program

This year's volunteer was Carrie Wood from Kansas. She plans to go on to veterinary school. She worked on nest dragging and a variety of other duties.

Figure 5. PERSONNEL (left to right: 1,2,3,4,5,6)
87/12-2

1. David L. Gilbert Refuge Manager (Pilot) GS-12 PFT
(Promoted from GS 11 Apr 12) Gilbert also serves as Regional Aviation Manager
2. Thomas R. Tornow Asst. Ref. Mgr. GS-11 PFT
(Promoted from GS 9 Sep 14)
3. Bradley A. Knudsen Asst. Ref. Mgr. GS- 9 PFT
4. Earl R. Hyink Biological Technician GS- 8 PFT
(Promoted from GS 7 Apr 26)
5. Dorothy E. Tomscha Refuge Asst. (Steno) GS- 6 PFT
(Promoted from GS 5 Dec 6)
6. Gary C. Breuer Laborer WG- 2 CS
(Return from Furlough 3/23 - 11/28/87)

Figure 6. TEMPORARY PERSONNEL (L to R 1,2,3,4,5)

1. Carrie Wood	SCA Volunteer		(5/26 - 7/31)
2. Larry Thompson	Bio Aid	GS-4	(5/7 - 8/28)*
3. Earl Kooiker	Bio Aid	GS-3	(5/4 - 11/28)
4. Noel Matson	Bio Aid	GS-3	(5/4 - 8/20)
5. Mark Hogan	Bio Aid	GS-3	(5/7 - 8/28)*
6. Steve Krentz	Bio Aid	GS-3	(9/18 - 8/28)*

* Worked weekends through fall on Intermittent app't.

Figure 7. Steve Krentz had previously worked for Lake Andes NWR. While attending Dakota State College, Madison, he worked for us, mainly contacting ASCS offices for info to update our easement owner files. 87/43-12
9/11/87 BAK

E.5. Funding

Table 4 Funding

FY	O&M Base (1260)	O&M ARMM (1260)	Res. Prob. (1262)	Exp.for Sales (6860)	YCC (1520)	Const. (2821)	Total
1987	175,000	90,000	20,000	4,000			289,000
1986	177,000	95,000		1,000	3,000		276,000
1985	168,000	77,000		2,000	3,000		250,000
1984	223,000	17,000			3,000	39,591	282,591
1983	188,000			5,000	3,000	42,000	238,000

E.6. Safety

One minor accident occurred when the boom on Gary Breuer's spray truck struck a car windshield.

Monthly safety meetings were held, usually featuring a movie plus discussion. Topics included driving and equipment operation, pesticide safety.

E.7. Technical Assistance

Almost no SCS drainage referrals are received anymore. Under the 1985 farm bill most drainage is illegal.

Swanpbuster

The 1985 Farm Bill provided operators would lose program benefits if they drained previously undrained wetlands. Photos of possible violations were taken during flights over the district, and sent to county ASCS and SCS offices for determination. Several of their newsletters warned operators that FWS was flying to look for violations. This publicity, designed to deflect responsibility for enforcement to FWS instead of USDA, undoubtedly did prevent some wetland drainage.

Figure 8. Photo of possible Swampbusting. Small tractor scrapers are being more commonly used than plow furrows.

87/73-8
11/17 TT

Figure 9. Possible Swampbust in Moody Co.

87/79-7
12/10 BAK

E.8. Revenue Sharing

Revenue sharing payments were made to all counties based on the 3/4 of 1% of adjusted purchase price formula. There was a large drop in the payments from the 1986 level. Lower farm land prices diminished the adjusted purchase price (and thus the entitlements). In addition, due to lack of money in the fund payments were reduced to about 60% of the formula amount.

F. HABITAT MANAGEMENT

F.1 General

Approximately 40% of our WPA acreage is wetland. Of this, 2 1/2% is Type I, 87% Type III or Type IV, and 10% Type V.

28% of the upland is in native sod, 23% seeded native grasses, 26% grass/legume mixtures, 11% other grassland, 3% trees and brush. 9% is cropped, most of that in preparation for seed down to native grass nesting cover.

F.2. WETLANDS

The above normal fall precipitation in 1986 provided excellent wetland conditions over the entire wetland district for the spring of 1987. This was fortunate since the winter snowfall and spring rainfall were below normal. The mild winter allowed for an early spring thaw the first week in February. Fall freeze-up was slow and gradual. Final freeze-up occurred in mid-December.

Due to the below normal spring and winter moisture only a few roadways were inundated by water in 1987. Only a few requests were received from road departments for lowering water levels in fee and easement wetlands overtopping roads. Permits were generally issued for temporary relief of high water to allow for repair and build-up of the road surface.

There are no water control capabilities on any of the WPAs within the Madison WMD. Time and distance constraints would prevent water management which control structures would require. We also think there is a high probability of unwanted assistance. Several dikes and/or ditch plugs have been constructed through the years to restore drained wetlands, impound natural flowages, etc. A 4.5 cubic yard pull type scraper was purchased this year to develop silt trap ponds, and duck pair ponds on WPAs. Eight WPAs (Heckenlaible, Kleinsasser, Fods, Munce, Hartle, Lost Lake, Molskness, and Sabers) were worked in 1987.

A 1.5 acre wetland was created on the R. S. Anderson WPA, Kingsbury County as a mitigation wetland. Federal emergency funding for the repair of Highway 14 affected several wetlands, thus requiring mitigation. Initially the County Road Department requested a borrow site on the WPA. A permit was issued in which they would pay five cents a cubic yard for the borrow material, plus remove the top soil and re-spread after the borrow was taken. When the Fish & Wildlife Enhancement Office in Pierre requested mitigation for another project, the borrow site also became a mitigation site. The borrow/mitigation pond was initially designed as a rectangular dugout. After explaining a duck's perspective, the dugout was modified and shaped into an aesthetic South Dakota pothole. A total of 18,640 cubic yards of borrow was removed, generating $932.00 of revenue.

Lake Thompson

Governor Mickelson appointed a special Lake Thompson Task Force in February to identify and examine solutions for relief of inundated landowners in the Lake Thompson watershed in Kingsbury County. The above normal rainfall received from 1982 to 1986 transformed the normally dry 8,000 acre Lake Thompson basin into an 18,000 acre lake 24 feet deep. Lake Thompson overflowed into the East Fork of the Vermillion River beginning in the summer of 1986 and flowed throughout 1987 as the over-saturated 300,000 acre watershed slowly drained out. 13,000 acres of the lake is private deeded land.

Task Force member Dave Nomsen of the National Wildlife Federation prepared a wetland restoration plan for the Lake Thompson watershed. By using National Wetland Inventory maps, 3253 historically and partially drained wetlands were identified totaling 26,940 acres. Had all of the wetlands been undrained within the watershed, much of the water now flooding Lake Thompson would have been held upstream in the watershed, reducing the severity of the flooding.

Mike Pollock, a landowner starting a resort between L Thompson and L Henry began driving across the Sterr WPA when the township road went under water. He then posted resort signs inviting the public to use the trail also. Although FWS balked at this practice, especially with no request or notice, and the refusal of another neighbor (McMaster) to let traffic through to the east. We finally agreed to offer temporary use in exchange for delayed haying of other land and public access through the McMaster land also.

Figure 10. A Kingsbury Co request for road borrow was turned into an asset when the pond was located and designed to provide water for duck pair use. 87/34-16
7-16 DLG

Figure 11. Township board dredging of the Clear Lake outlet, Minnehaha Co, nearly drained the WPA wetland. A satisfactory level was finally agreed upon. 87/28-10 & 13
6/25/87 TT

Figure 12. Clear Lake WPA after restoration.
87/$6-12
9/29/87 DLG

F.3. Forest Lands

Trees in the district are limited to shelterbelts and groves around old building sites. Volunteer willow and cottonwoods are common around marsh edges.

Shelterbelt establishment is generally not encouraged on WPAs as it is hard to relate trees to the primary purpose of WPAs which is waterfowl production. Also, young trees interfere with grassland management practices such as grazing, burning and haying. Nevertheless, on some WPAs where upland cover is not considered to be a limiting factor, the WMD has cooperated with shelterbelt establishment when requested by Wildlife Clubs.

A grazing permittee removed volunteer Siberian Elm from the Johnson WPA. These trees had invaded the township road right-of-way, the boundary fenceline and the seeded native grass planting. The tree stumps were treated with 2,4-D to deter regrowth.

Volunteer Siberian elms were removed from a 28 acre native grass seeding on Lounsberry WPA, MCCook Co prior to fall seed harvest, and from 12 acres of DNC on LaClair WPA.

Figure 13. Many shelterbelts on private land are being dozed out to make more cropland. Few new plantings are being established. Pers photo BAK

F.4. Croplands

All the farming in the district is done by co-operative farmers, either for wildlife food plots or for seedbed preparation for new cover seeding.

Food Plots

Plots of feed for deer and pheasants are left on WPAs where acreage is adequate and good non-erodible land is available. Food plots are usually 15 to 40 acres in size. Typically they are farmed in a two-year rotation, 1/2 small grain underseeded with sweet clover and the other 1/2 corn. The government's share (1/2 of the corn) is left standing. Any remaining corn may be picked by the cooperator after April 1 of the following year.

Our cooperators have been generally happy with this rotation and many have remarked that they require little, if any, fertilizer on the corn and that soil condition and moisture-holding capacity remain excellent. This is also a popular program with the local sportsmen, as they see it as a bona-fide effort by the FWS to do something to increase pheasant numbers. See Table ?? for the 1987 co-operative farming food plots.

Table 5 1987 Co-operative Farming - Food Plots

County	WPA	Total Acre Farmed	Unharvested Corn	Cooperator
Brookings	Bjornlie	15.0	7.5	B. Larson
Brookings	Wenk	30.0	7.5	L. Dahl
Hamlin	Cox	18.5	9.5	C. Wiarda
Hamlin	LeClair	15.0	3.75	R. Holiday
Kingsbury	Neu	24.0	6.0	Don Neu
Kingsbury	Plum Lake	44.0	11.0	J. Doyle
Kingsbury	R.S.Anderson	30.0	7.5	F. Virchow
Lake	Hansen	20.0	6.0	S. Hansen
Lake	Lake Henry	44.0	11.0	Ron Hodne
Lake	Madison	10.0	2.5	Tom Wolf
Lake	Murfield	30.0	7.5	K. Murfield
Lake	Gerry	20.0	5.0	D. Brown
Lake	Pekarek	18.0	5.0	M. Pekarek
McCook	Hyde	44.0	11.0	P. Tschetter
Minnehaha	Kindt	40.0	10.0	L. Harden
Minnehaha	Buffalo Lake	44.0	11.0	R. Fods
Minnehaha	Wise	39.0	8.5	D. Struck
Total:		518.5	145.25	

Other Cooperative Farming

An additional 519 acres was farmed in 1987 in preparation for seeding to nesting cover (Table). Usually depleted cover is farmed for three years, the first two years with corn or other row crops before the new seeding along with a nurse crop in the third year. Generally no charge is made for the first year and sometimes

none of the years on very small parcels or poor land. Farming receipts totalled $5919.12. Although we charge fees or claim unharvested shares in the field when appropriate, the objective is tillage and reduction of undesirable plants in preparation for reseeding to nesting cover.

Table 6 Co-operative Farming - Seed Bed Preparation

County	WPA	Total Acres	Crop	Unharvested	Cooperator
Brookings	Brush Lake	12.0	Oats	0	Gisselbeck
Brookings	Goodfellow	4.0	Oats	0	Goodfellow
Deuel	Lounsberry	35.0	Oats	0	Lounsberry
Kingsbury	R.Anderson	12.0	Oats	0	F.Virchow
Kingsbury	Williams	40.0	Corn	10.0	A.Mudhenke
Lake	Gerry	29.0	Corn	0	D. Brown
Lake	Fischer	48.0	Corn	5.0	D. Stewart
Lake	Pekarek	62.0	Oats	0	M.Pekarek
Miner	Swanson	24.0	Oats	0	M.Feller
Minnehaha	Buffalo Lake	20.0	Oats	0	R. Fods
Minnehaha	Kindt	38.0	Corn	0	L.Harden
Moody	Kleinsasser	28.0	Corn	5.0	T. LeBrun
Moody	Kleinsasser	14.0	Millet	14.0	B.Zwart
Moody	Kleinsasser	95.0	Corn	4.0	B.Zwart
Moody	Kleinsasser	35.0	S.Beans	0	T.LeBrun
Moody	F.Anderson	9.0	Oats	0	L.Schultz
Moody	Benson	14.0	Oats	0	L.Miles
Total:		519.0		33.0	

F.5. Grasslands

About one-fourth of our upland is in original sod prairie. Most of it is only fair for condition class; nearly all of it has been invaded by Kentucky bluegrass, Brome and Quackgrasss. Our management efforts are directed toward raising the condition class over a longer period of time while maintaining at least good wildlife cover in most seasons. Management practices have included grazing, haying, and prescribed burning. Documentation of conditions and the effect of management include grassland transects and photo-points and nest dragging.

Plantings

Grassland plantings are to provide nesting cover on new tracts or replace depleted cover. No native sod is broken.

Native grass mixtures have been used for nesting cover plantings largely because of special problems with primary noxious weeds. In conformance with recent nesting cover recommendations, we continue to use high ratios of cool season species (Table).

Table 7 1987 Native Grass Mixture

Species	% of Stand	Rec. Rate PLS Lbs./acre	PLS Lbs./acre
G. Needlegrass	40	9.6	3.8
W. Wheatgrass	20	11.9	2.4
S. Wheatgrass		(not available)	
Big Bluestem	5	10.6	.5
Little Bluestem	5	6.7	.3
Indiangrass	5	10.0	.5
Switchgrass	15	4.5	.7
Side-oats grama	5	9.1	.5
Total:	95		8.7

Table 8 1987 Native Grass Seedings

County	WPA	Acres	Cooperator
Brookings	Brush Lake	12	L. Gisselbeck
Brookings	Goodfellow	4	S. Goodfellow
Deuel	Lounsberry	35	A. Lounsberry
Kingsbury	Williams	25	Force Account
Kingsbury	R. S. Anderson	12	Frank Virchow
Lake	Pekarek	62	Melvin Pekarek
Lake	Hansen	20	Force Account
McCook	Heckenlaible	36	Force Account
McCook	Janssen	47	Force Account
Miner	Swanson	24	Mike Feller
Minnehaha	Buffalo Lake	20	Roger Fods
Moody	F. Anderson	9	Lloyd Schultz
Moody	Benson	14	Larry Miles
Total:		320	

Grass Seed Harvesting

The 1985 Farm Bill (Conservation Reserve Program) provided incentives for farmers to convert highly erodible cropland back to grassland cover. South Dakota landowners currently have signed 846,762 acres into the CRP, 41% of which have been seeded by the end of 1987. This in turn created a high demand for grass seed. Seed companies inventory soon diminished and seed prices soared. The Madison WMD was one of only a few landowners that has been re-establishing
native grass cover and we were soon deluged by requests to harvest seed. To help promote the seeding of native grasses on CRP lands, the WMD issued 5 co-operative agreements to harvest primarily indiangrass, big bluestem and switchgrass. The WMD's share was 50% of the seed to be delivered cleaned,
bagged and tested. This worked quite well for both the WMD and the cooperators since the current price per pound of pure live seed was near $15.00 for all three species. One field of tall wheatgrass on Lake Henry WPA was harvested with the WMD receiving 40% of the seed cleaned, bagged and tested. The total poundage harvested is still

unknown due to the cleaning and testing not being complete at this time. Table 9 lists the WPAs where seed was harvested in 1987. All of the cooperators have expressed an interest to harvest seed again in 1988.

Table 9 1987 Native Grass Seed Harvest

County	WPA	Acres	Cooperator
Brookings	Brookings	30.0	Scott Baumiller
Brookings	Wenk	40.0	Scott Baumiller
Deuel	Tribitt	10.0	James Daily
Deuel	Stoltenburg	27.3	Martin Grabow
Deuel	Severson	25.7	Martin Grabow
Deuel	Milton	12.0	Martin Grabow
Hamlin	Opdahl Slough	8.8	James Daily
Hamlin	Peterson	31.0	James Daily
Kingsbury	Hojrup	30.0	Scott Baumiller
Kingsbury	Kattke	30.0	Scott Baumiller
Lake	Lake Henry	20.0	Ray Schultz
Lake	Madison	40.5	Ray Schultz
Lake	Alquire	28.9	Ray Schultz
Lake	Murfield	80.8	Ray Schultz
Lake	Children's	60.0	Scott Baumiller
McCook	Lounsberry	15.0	Ray Schultz
McCook	Janssen	23.2	James Daily
McCook	Hyde	152.0	James Daily
Minnehaha	Johnson	31.7	James Daily
Minnehaha	J. Petri	12.0	Larry Brunswig
Minnehaha	Lost Lake	70.0	Larry Brunswig
Minnehaha	Kindt	20.0	Larry Brunswig
Minnehaha	Buffalo Lake	100.0	Larry Brunswig
Total:		898.4	

F.7. Grazing

Grazing remains our primary management tool for native grasslands. Grazing is more thorough than haying, and the demand is more stable. Usually grasslands depleted enough to require haying are not in very high demand except in drought years. The 1987 grazing fee was $7.20 per AUM. Total receipts were $2,5;95.00. Adjustments on billings were made based on fence construction and repair, noxious weed control, volunteer tree removal, township road mowing and pocket gopher control. Table lists the 1987 grazing use.

Table 10 1987 Grazing

WPA and County	Period of Use	Permittee	Acres Grazed	AUMs
Brookings				
Dahl	7/3 - 8/29*	Lowell Dahl	36	50.4
Hamlin				
Cox	5/15 - 8/4 *	Leland Roe	208	150.6
Kingsbury				
Neu	5/17 - 6/28*	Don Neu	24	24.0
Plum Lake	5/18 - 7/3	Jim Doyle	64	79.6
Lake				
Long Lake	10/1 - 11/1	Wilmer Thompson	5	7.5
McCook				
Holm	5/1 - 7/10*	Harley Wubben,Jr.	61	61.0
Sabers	5/6 - 6/15*	Rodney Streff	67	67.0
Huls-	5/2 - 6/2	Mark Huls	27	27.0
Reif	7/18 - 8/13	Myron Tuschen	53	66.0
Miner				
Furnstahl	6/1 - 7/1	Terry Rohrdanz	10	10.0
Minnehaha				
Johnson	5/5 - 7/7 *	Neal Even	93	139.0
J. Petri	5/1 - 6/1	Bob Zimmer	45	45.0
Lost Lake	5/11 - 6/17	Lewis Hanisch	54	54.0
Hartle	5/1 - 6/1	Vernon Fritz	2	2
Hartle	4/30 - 7/2 *	Paul Kaffar	115	142.1
R. Petri	5/29 - 9/4 *	Ed Petri	25	48.0
Moody				
Reaves	5/8 - 7/11*	Harry Reaves	35	48.0
Total:			924	1028.2

* Multiple Units

Figure 14. Big bluestem response on John Petri WPA (Minnehaha Co) after spring graze. Stocking rate was 3.3 Animal Units per acre removing 1.8 AUMs/A, May 1 to June 1.
87/$6-15
9/29/87

F.8. Haying

484 acres were hayed on 17 WPAs during 1987 for mulch reduction and control of noxious weeds, primarily Canada thistle, Musk thistle, and Wormwood sage (Table 11). The majority of this acreage involved haying of recent native grass seedings planted over the past two years. Some of the haying permits were issued and haying accomplished prior to July 10 to catch the thistles before they went to seed. While this undoubtedly led to the destruction of some waterfowl nests prior to hatching, it is hoped this more timely weed control effort will reduce the likelihood of getting into a self-perpetuating annual "haying after the seeds have blown" type of control effort.

Total receipts were $1196.00. Charge per acre varied from $5.00 to $15.00 per acre, depending on quality of hay, amount of weeds, etc. Several areas were hayed for no charge in return for weed control on the most badly
infested areas.

Table 11 1987 Haying

County and WPA	Permittee	Cover Type	Purpose (Acre) M. Red.	W.Cont.
Brookings				
Wenk	L. Dahl	Grass/Legume		9.0
Brush Lake	L. Gisselbeck	N.G.Seeding		38.0
Deuel				
W.Johnson	J. Anderson	N.G.Seeding		15.0
Hamlin				
LeClair	R. Holiday	Grass/Legume	12.0	
Kingsbury				
Neu	Don Neu	Grass/Legume		13.0
Lake				
Lake Henry	Ron Hodne	T.G. Seeding		20.0
Ravenburg	K. Hageman	T.G. Seeding	7.0	
McCook				
Gottlob	R. Eichacker	Grass/Legume		36.0
Minnehaha				
Kindt	F. Vaughn	Grass/Legume		48.0
Lukes	F. Vaughn	Grass/Legume		50.0
Wise	D. Struck	Grass/Legume	32.0	
Wise	D. Becker	N.G.Seeding		10.0
Voelker II	D. Becker	Grass/Legume		59.0
Jordan	L. Alderson	N.G.Seeding		6.0
Delbridge	J. Story	T.G.Seeding	53.0	
Hartle	P. Kaffar	T.G.Seeding		35.0
Buffalo Lake	R. Fods	T.G.Seeding		20.0
Moody				
Bothwell	D. Ellens	Grass/Legume	21.0	
Total:			125.0	359.0

F.9. Fire Management

Prescribed Burning

Six prescribed burns were completed in 1987, totaling 240 acres. (Table 12). This included two stands of seeded native grasses and one field of tall wheatgrass which were burned to induce uniform growth and stimulate seed production for seed harvest conducted later in the year.

Table 12 1987 Prescribed Burning

County	WPA	Acres	Date
Kingsbury	Williams	60	4/06/87
Lake	Lake Henry	28	4/15/87
Lake	Long Lake	5	4/15/87
McCook	Lounsberry	21	4/03/87
Miner	Sullivan	2	4/15/87
Minnehaha	Lost Lake	124	4/02/87
Total:		240	

Figure 15. Native sod on Lost Lake WPA, Minnehaha Co, following a spring burn. 87-35/21A
8/21/87 BAK

F.10. Pest Control
Weed Control

Spraying to control primary noxious weeds continues to be one of our largest, and also most important programs. The importance of our weed control effort is stressed by the County Commissioners who approve our purchases, at nearly every meeting with them. The recent figures released by the South Dakota Weed and Pest Commission is that there are over 375,000 acres of Canada thistle. This acreage has more than doubled the past 20 years. Musk and plumeless (Biennial) thistle infect over 150,000 acres.

2,4-D spraying in May and June followed by mowing as necessary when plants are too mature are the principal force-account weed control methods. Areas mowed in July and early August are sprayed in late August and September when regrowth occurs. Cooperators also use MCP on crops underseeded by legumes. Tables 13 and 14 summarize the WMD's weed control efforts in 1987.

Table 13 1987 Weed Control - Spraying (Acres)

County	Biennial Thistle	Canada Thistle	Leafy Spurge	Wormwood Sage	Total
Brookings	55	275	114	2	446
Deuel	5	116	80	11	212
Hamlin	0	38	0	0	38
Kingsbury	20	388	0	18	426
Lake	7	204	94	6	311
McCook	112	544	7	76	739
Miner	0	56	0	0	56
Minnehaha	35	340	7	15	397
Moody	17	188	49	0	254
Total Acres	251	2149	351	128	2879

Table 14 1987 Weed Control - Mowing (Acres)

County	Biennial Thistle	Canada Thistle	Wormwood Sage	Total
Brookings	5	20	0	25
Deuel	0	103	0	103
Kingsbury	0	16	0	16
Lake	0	26	0	26
McCook	25	101	2	128
Minnehaha	0	10	0	10
Moody	0	63	0	63
Total Acres	30	339	2	371

Figure 16. A new Spra Coupe was acquired, but had to be returned to vendor for addition of required ROPS. We were fearful they would add a monstrosity, but the final product appears excellent. 87/36-1
7/21/87 BAK

F.13. WPA Easement Monitoring (See also H.17 Law Enforcement)

Letters were sent to 360 new owners/operators of easement lands. Most of the changes were found by Steve Krentz during visits to ASCS office in the district.

The U. S. Fish & Wildlife Service Wetland Easement Program began in the early 1960's when it was realized how rapidly wetlands in private ownership were being permanently destroyed. The easement is a perpetual contract between the FWS and willing sellers, in which the FWS pays the landowner a one-time payment not to drain, fill or burn covered wetlands. Currently, over 40,000 wetland acres have been protected by easement in the Madison WMD with money generated from the sale of Duck Stamps.

The monitoring and enforcement of these easements is a #1 priority program in this region, and has become a large percentage of the total management effort at this station. In addition to ground observation and reports from others, routine aerial surveillance flights are conducted each year, usually beginning in October, during which photos for record are taken of all new easements, older easements with new owners, and all possible violations. These photos are then checked against other records to determine if a violation has occurred, and the area is then ground checked for further documentation. A contact with the landowner or tenant is then conducted to gain restoration of protected wetlands.

Most violators claim "ignorance". They either did not know about the easement, or didn't completely understand its provisions. Courtesy letters have been sent to new landowners for years to advise them of the easement. In 1984, in an effort to further reduce violations, the FWS initiated a program to inform all easement owners and operators of the easement on their land via a courtesy letter advising them to direct questions to us. County ASCS Offices were used as a source of current owner/operator information. The response was quite positive, with some land operators telling us they had not known about the easement and had been planning drainage of protected wetlands. An agreement with the ASCS to keep the FWS advised of new owner/operator changes has been unsuccessful, as most ASCS Offices seem to be overburdened with their own work. This fall Bio-Aid Krentz updated easement owner/operator records from ASCS Office contacts. A total of 158 owner and 202 operator changes were found since the initial mailing. Courtesy letters are being sent to all the new owners and operators.

The WMD easement surveillance flight was conducted from November 6 - November 19. Additional surveillance was conducted with the low level flights on December 9 and 10. Eleven burn violations were recorded and warning letters sent to owners and tenants. Thirty-one ground checks were required to document drainage or fill violations after the low level flight was completed. Fifteen ground checks were completed before bad weather set in. Twelve violations were confirmed, 11 drainage and 1 fill; 16 ground checks remain to be completed. Two easement violations were observed from the ground during the summer of 1987, both were restored.

Twenty-four violations from 1986 were satisfactorily restored during 1987. Four violations from previous years are pending, two due to wet conditions and two are awaiting court action.

A great deal of additional time was spent responding to requests to lower water on easement wetlands affecting township and/or county roads, due to recent high water levels. This was a time-consuming process, generally involving an initial inspection of the "problem", a meeting with the affected landowner and/or township officials, an additional inspection of the site with the concerned parties, and quite often the establishment of a reference bench mark. When the request appeared legitimate, a permit was issued

Figure 17. "No need to wait for the dozer, I'll handle this problem right now". Actually Brad and Tom just advised the owner of the easement that any additional rocks out in the wetland would violate the easement.
87/83-24 & 24A
12-17-87 TT

for a temporary reduction of the water level, generally six inches below the road surface, with the understanding that the township or county would then build the road up by six inches, giving them a foot of relief. Such permits always state that permission must be received from downstream landowners prior to the work, and any harmful effects would be the responsibility of the people requesting and doing the work, not the FWS. We require the permittee to provide proof that downstream interests have agreed to the work before our permit is issued. In the past downstream interests were sometimes overlooked. A late summer closing of the ditch is then requested. This satisfies most of the people making the requests. However, the compliance of the ditch closing sometimes requires an additional contact with the interested party and a subsequent ground check for compliance.

G. WILDLIFE

G.2. Endangered and Threatened Species

Adult Bald eagles were observed 3/8 near Lyons L WPA, 3/13 in Lake Co, and another W of Franklin 11/7. One Bald eagle was seen on the SE shore of L Thompson 11/28.

G.3. Waterfowl

The first waterfowl observed was a drake Wood duck on Clear Lake in Minnehaha Co, Feb 6. Twenty Canada geese, 100 Mallards and 20 Pintails were seen near Hyde WPA in McCook Co, Feb 13. There were 50,000 Snow & Blue geese on Milwaukee Lake and 22,000 on L. Henry (Lake Co) Mar 6. Nearly all water areas were open on that date.

Waterfowl began to concentrate in Sep with large flocks of Mallards and Blue winged-teal observed in Kingsbury & Miner Cos.One hundred Ruddy ducks were observed on Hqs pool Oct 22, joined by 50 Canvasbacks 11/5. Snow & Blue geese were observed migrating over Madison 11/21 & 22. 100,000 Snow & Blue geese were counted in Kingsbury Co Nov 23, along with large numbers of Mallards, Scaup and Coots.

A very unusual waterfowl sighting was 8000 ducks, 400 Canada and 2 White-fronted geese on Long Lake during the X-mas Bird Count 12/21. Nearly all the ducks were Mallards, but G-w teal, Golden-eyes, Ruddies, Pintail, C Merganser, L Scaup, Ring-neck, and Wigeon were included.

Waterfowl Production

37 yearling Giant Canada geese were released by GF&P on Beyer WPA 4/10 as part of the restoration being carried out in recent years. Broods raised by previously stocked geese on other WPAs are becoming a common sight. Six pairs of Giant Canadas were seen during the pair count, with 5 of 15 sample WPAs containing geese. Fifteen young Canadas were observed on the Madison WPA in May.

Figure 18. Canada goose incubating on a muskrat house on R S Anderson WPA, Kingsbury Co. 87/20-11
4-30-88 TT

Quarter section waterfowl pair counts were conducted May 19 & 20. Total projected pairs were 433, up from 243 in 1886. The increase was probably due mainly to low run-off - few temporary ponds on private land. Mallard pairs increased from 46 to 142.

Table 15 1987 Duck Species Composition

	Quarter Sec. Pair Count		% (Upland	Nest Drag	Survey
Species	Proj. Pairs	%	Nesters Only)	Nests	%
BW teal	200	46.2	47.7	19	32.2
GW teal	3	0.7	0.7		
Mallard	142	32.8	33.9	40	67.8
Am Wigeon	3	0.7	0.7		
N Pintail	4	0.9	1.0		
Gadwall	36	8.3	8.6		
N Shoveler	5	1.2	1.2		
Wood duck	26	6.0	6.2		
Redhead	6	1.4			
Canvasback	0	0			
Ruddy	8	1.8			
Total	433	100.0	100.0	59	100.0

Waterfowl production was calculated at 51,000, based on the pair count expanded to the total district wetland acres. The productivity was derived from the nest drag (Mayfield 40% method) nest success average of the past three years (29.3%) converted to hen success (productivity) of 49% according the the graph in Cowardin & Johnson (1979 Journal of Wildlife Management). Brood size (6.2) was the average Class II size from previous surveys

(7.0) times 89& assumed survival to flight stage (Cowardin & Johnson).

The duck pair count indicated 433 pairs on 304 wetland acres (1.42 pairs/wetlamd acre). The district contains 12,000 wetland acres.

12,000 acres x 1.4 = 16,800 pairs in the district. 16,800 x .49 productivity = 8232 broods x 6.2 ducks per brood = 51,038 ducks produced.

Long Lake WPA Nest Drag - Predator Removal (see also G.15)
Skunk trapping was begun on Long Lake on Mar 5, the 3rd year of this effort. Seven skunks removed in Apr & May. Traps were pulled in early June after a 3 week period with no catches, and loss of several traps to thieves. Several duck nests were later lost to predation.
Rainy weather delayed the nest dragging. Seventeen nests were found on the first drag of 20 acres of DNC(Jun). Projected nest initiations per 100 acres were 101, up from 73 in 1986. Mayfield success, however was down from 47% to 20%. (Predation increased after the traps were pulled.) Ducks produced per 100 acres were similar, (33 in 86, 28 in 87).

Table 16 Long Lake WPA Nest Survey Results (Skunk Removal)

		Nest Success		Est. Nest Initiations/100 Acres			
	No.Nests			Native	Seeded		Hab.Types
Species	Located	Observed	Mayfield	Sod	Native DNC	Tame	Combined
BWT	19	69	29	15.8	29.3	57.8	27.4
Mallard	40	50	15	31.2	0	107.6	74.1
Gadwall							
Pintail							
Shoveler							
All Spp	59						
Acres Searched				44	83	12	139
Apparent % Success				67	53	100	57
Mayfield % Success				20	17	100	18

G.4. Marsh & Water Birds
Great blue herons, Black crowned night herons, American bitterns, Double crested cormorants and Pied billed grebes are common in the district. Western grebes nest in Hqs pool and other deep marshes.

Four D-c cormorant colonies were censused during June with 257 total nests observed. A Cattle egret and B-c Night heron colony on L Henry WPA had an estimated 300 nests. 50 Great egrets were observed adjacent to DeNeui WP A 9/11.

Figure 19. Snow & Blue geese feeding N of Milwaukee L (Lake Co)
Pers Slide
BAK

Figure 20. 2000 Pelicans were using the pool at Hqs Sep 8. The previous high count was about 600. There is no nesting in the vicinity; the birds are thought to be sub-adults.
87/43-2
9/8/87 BAK

Figure 21. Heron rookery on L Henry WPA, Lake Co
Pers Slide
BAK

G.5. Shorebirds, Gulls, Terns

Killdeer, Franklins & Ring-billed gulls and black terns are common in the district. An Upland sandpiper was observed on Lost L WPA 4/30.

G.6. Raptors

Kestrels, N harriers, Swainson's, Red-tailed and rough legged hawks are common. G-horned owls nest in shelterbelts and native cottonwoods. Two snowy owls were seen on the S side of L Madison during the X-mas Bird Count Dec 21. One Turkey vulture was recorded 4/17. An Osprey was seen of Madison WPA 9/29.

G.8. Game Mammals

Two moose were observed south of Orland in Lake county 9/11. They were later reported in Minnehaha Co, then moving north through Moody and Brookings Cos. Wanderers like these show up occasionally in the district, probably from Canada. Generally they are shot by someone before they can return home.

White-tailed Deer
High water on most WPAs has increased open water and reduced marsh vegetative cover. Deer use of WPAs is still high, however.

Red Foxes
Foxes are not often seen, but they are common. Nest drag crews saw some foxes and found evidence of others, mainly when eggs disappeared from nests.

Muskrats
Population remains very high. High water has diminished vegetation in many wetlands, but has improved others. Muskrats will be in trouble when present high water recedes.

G.10. Other Resident Wildlife

Ringed-necked pheasants continued to increase, rebounding from declines in earlier winters.

Gray partridge numbers appear stable, with observations common.

Fifteen millet bales from Kleinsasser WPA were distributed on other WPAs for wildlife feed.

G.11. Fishery Resources

Fish populations are believed to have increased in many WPAs with the high water levels of recent years. About six WPAs usually

offer fishing; now the number is probably at least twice that.

Several WPAs have been used by G.F.&P. in recent years as rearing ponds for Walleye fry. They are put in in the spring and removed in the fall of the same year. Any survivors of the removal will normally winter kill in the shallow marshes.

G.15. Animal Control

Predator management on Long L WPA was continued as part of a duck nesting study. (See also G.3)

G.17. Disease Prevention and Control

No disease outbreaks occurred.

H. PUBLIC USE

H.1. General

Most public use in the district is for hunting and trapping. The WPAs also received use for hiking, birdwatching, photography, etc.

H.2. Outdoor Classrooms - Students Environmental Education
There is no formal EE program in the district. Assistance is provided to classes using the WPAs when requested.

H.4. Interpretive Foot Trails

One foot trail, on the Madison WPA, winds up a prairie hillside to a marsh overlook.

H.5. Interpretive Tour Routes

The Madison WPA auto route still lacks interpretation, but receives significant use for wildlife observation, especially in the fall. It was closed part of the summer for high water.

H.6. Interpretive Exhibits/Demonstrations

A kiosk on the Madison WPA was maintained with visitor information on the district and the WPA program.

H.7. Other Interpretive Programs
Several programs were offered to the Madison IKES and other groups when requested.

H.8. Hunting
Waterfowl were plentiful for the Oct 3 opener. Many hunters had limits with BWT, Gadwalls and Mallards being most common species. The waterfowl season was generally excellent, with ducks and geese in the district throughout the season. 100,000 Snow & Blue geese were recorded in Kingsbury Co Nov 23.

Pheasant hunting opened Oct 17 with hunters averaging 1.5 birds in Lake Co. Some limits of three were still being taken until the season closed in early Dec.

The Deer hunting season opened 11/28. WPAs in Lake Co received heavy use. Success was good with several hunters bagging nice bucks on opening day. A lot of road hunting was observed. The ice storm on opening day caused even fewer than usual hunters to leave their pickups.

H.9. Fishing

Fishing on WPAs was better than usual. Recent high water levels have allowed fish to over-winter in many wetlands where they would normally die from oxygen depletion. Mud L WPA in Moody Co offered good fishing for Northern pike.

L Thompson, bordering the I Johnson and Sterr tracts had a very large population of small "hammer handle" N pike. With up to 24 feet of water in the usually dry lake it is expected to be an excellent fishery for years to come.

H.10. Trapping

Trapping for muskrats was excellent, other species good. Prices were lower than other recent years.

H.11. Wildlife Observation

Vehicle and foot trails on the Madison WPA receive use everyday the weather is suitable. Most other units receive observation use also, usually from adjacent roads.

H.14. Picnicking

Our only picnic are is in the interpretive area along Hwy 19 near Hqs. It receives a lot of use in good weather and encourages use of the kiosk and marsh trail.

H.17. Law Enforcement

Our principle L.E. activity is easement enforcement (reported in F. 13) and abuse of WPAs by neighbors putting rocks over the fence, occasional cattle trespass, turning around on our land at the end of farm field rows, etc. A contact usually ends an individual problem, but with hundreds of neighbors and tenants another problem always crops up elsewhere.

WPAs were patrolled as other work permitted, especially on opening weekends of hunting seasons. Some time was spent assisting GF & P Conservation Officers on night spotlighter patrol. C.O.s willingly assisted us with WPA surveillance, making numerous cases without our aid when violation of state laws occurred.

The Lake Co Pro-Pheasants club constructed a holding pen and released a thousand pheasants onto the Hansen WPA (about 120 acres of upland) in August. The group had assisted with some tree planting and assumed the right to do the stocking. The pen was later removed despite their appeal through a congressional office. The pheasants had moved off the WPA by the start of the hunting season in Oct.

I. EQUIPMENT AND FACILITIES

I.1. New Construction

The Hqs was hooked up to the new L Madison Sanitary District sewer system in Oct.

Thirty three duck pair ponds were constructed on 9 WPAs.

I.2. Rehabilitation

Approximately 7 miles of fence was constructed on the WPAs.

The east end of the Office was resided. Ever since new that end of the building had leaked through the tongued & grooved siding.

Numerous approaches with culverts were added to new WPAs to permit management access.

I.4. Equipment Utilization and Replacement

New Equipment

A Spra-coupe self propelled weed sprayer was purchased.

A used 4 1/2 yard scraper was purchased for construction of ditch plugs, dike repair and creation of duck pair ponds.

A Honda 4x4 ATV was purchased for nest dragging, fence maintenance, etc.

A new 200 gal Pacific fire pumper was received 11/4.

Equipment transfer

Our TD-14A dozer was transferred to Tewaukan NWR.

Figure 22. A new tailgate provides a ramp for loading 3 & 4 wheeled ATVs. 87/20-2 & 3
4/28/88 ERH

Communications

The TIE Busnesscomm 16 phone system installed in 1986 has not worked well. The main problem has been cutoffs during converasations. Fortunately the local company has provided excellent backup service, replacing all phones and twice replacing the processing unit. They say other installations are not having problems.

I.6. Computer Systems

Mike Long, RO R&W visited the station, providing excellent computer orientation for several staff members. Other work load has prevented any of us from getting up to speed in using it in 1987.

I.7. Energy Conservation

Four heat storage units were installed in the office to reduce electrical demand during peak periods.

Figure 23. The new tractor CGS accepted on our behalf does not have the hydraulic capabilities of the unit we spec'd, of course, but came closer than the Kubota they tried to get us to take the first round.

87/4-1
1/5/87 BAK

Figure 24. The new HD-10 Shaver post driver works well mounted on the Bobcat.Tracks permit use in several inches of water. We keep tracks on for all uses, year around. 87/32-11 BAK

J. OTHER ITEMS

J.1. Co-operative Programs

Staff participated in the annual Christmas Bird count Dec 21.

Station staff and GF & P personnel put out 28 large flax nesting bales on WPAs and 14 on GPAs in Minnehaha Co. and in L. Herman Sate Park. Principle nesting use is by Canada geese.

WMD staff recorded pheasant sightings for GF & P winter sex ration studies.

3. Items of Interest

Tom Tornow received a $400 Special Achievement Award for work on a DU project at Benton Lake, MT prior to coming to Madison.

Refuge Supervisor Jim Matthews visited the station Jan 27 & 28.

Figure 25 Earl Hyink received congratulations on his first 20 years with FWS. 87/84-4

Figure 26. Tom Tornow is off to a good start with 10 years of service. 87/59-2

Figure 27. A controversial ammunition plant (Dela-Tek) began building on part of a Deuel Co easement. We spent a considerable amount of time protecting our interests.
87/32-18 & 19
7-16-87 BAK

Staff Training during 1987 included the following:

2/4 Hyink, Biological Farming Seminar, Ames, IA
2/17-20 Gilbert, Wing Bee, Santa Fe, NM
3/16-20 Tornow, Hyink, Knudsen, 40 hr L.E., Grand Island, NE
April, Gilbert, Tornow, Holistic Resource Mgt II, Albuquerque, NM
April, Knudsen, Basic Refuge Mgr Academy, Blair, NE
5/14, Tornow, Kooiker, Hogan, Matson, Thompson, SD Pesticide Cert
6/24 & 25, All Temporaries, Defensive Driving Course, Wagner, SD
6/16-18, Knudsen, Wetland Classification Symposium, Jamestown, ND
8/17-20, Gilbert, Tornow, Project Leaders, Quivera NWR
8/24-27, Gilbert, RAM & Resource Pilots, Boise, ID
9/16-17, Tornow, Knudsen, Hyink, L.E., Sioux Falls, SD
9/16-18, Gilbert, Aviation Safety, Kalispell, MT

J.4. Credits

Dorothy Tomscha gathered and entered data for sections B,C,E and typed in much of the report. Tom Tornow wrote sections F.1-5,10,13 and reviewed the draft. Brad Knudsen wrote sections F.8 & 9. Earl Hyink gathered data for section F. Steve Hicks asisted with computer set up and trouble-shooting. Gilbert completed the report.